MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2017/2018

BDM2384 – DATABASE MANAGEMENT SYSTEMS

(All sections / Groups)

23 OCTOBER 2017
9.00 a.m – 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 4 pages (including cover page) with 4 questions only.
2. Attempt ALL FOUR questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answer in the Answer Booklet provided.

Question 1 (25 Marks)

PROJECT_CODE	PROJECT_MANAGER	MANAGER_PHONE	MANAGER_ADDRESS	PROJECT_BID_PRICE
21-5Z	Holly B. Parker	904-338-3416	3334 Lee Rd., Gainesville, FL 37123	$16,833,460.00
25-2D	Jane D. Grant	615-898-9909	218 Clark Blvd., Nashville, TN 36362	$12,500,000.00
25-5A	George F. Dorts	615-227-1245	124 River Dr., Franklin, TN 29185	$32,512,420.00
25-9T	Holly B. Parker	904-338-3416	3334 Lee Rd., Gainesville, FL 37123	$21,563,234.00
27-4Q	George F. Dorts	615-227-1245	124 River Dr., Franklin, TN 29185	$10,314,545.00
29-2D	Holly B. Parker	904-338-3416	3334 Lee Rd., Gainesville, FL 37123	$25,559,999.00
31-7P	William K. Moor	904-445-2719	216 Morton Rd., Stetson, FL 30155	$56,850,000.00

a) From the given table, what problem would you encounter if you wanted to produce a listing by city? How would you solve this problem by altering the file structure?

(10 Marks)

b) Explain the significant differences between a file-processing system and a database management system.

(10 Marks)

c) Explain the differences between a personal database system and an enterprise class database system

(5 Marks)

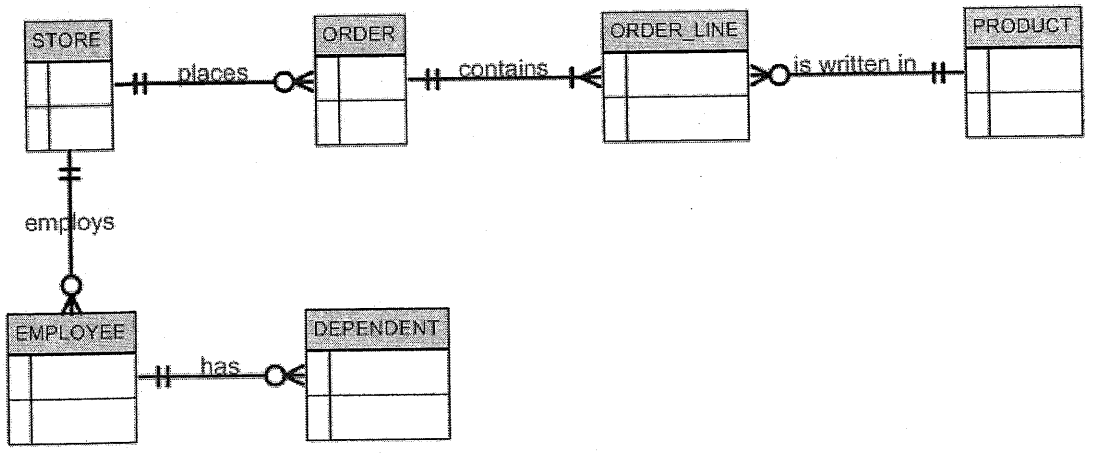
Question 2 (25 Marks)

a) What is a recursive / unary relationship? Give an example.

(5 Marks)

b) Write the business rules reflected in the given E-R Diagram

(10 Marks)



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c) Given the following business rules, create the appropriate ERD.

(10 Marks)

- A company operates many departments.
- Each department employs one or more employees.
- Each of the employees may or may not have one or more dependents.
- Each employee may or may not have an employment history.

Question 3 (25 Marks)

Answer each of the following questions briefly. The questions are based on the following relational schema:

Emp(*eid:* integer, *ename:* string, *age:* integer, *salary:* real)

Works(*eid:* integer, *did:* integer, *pcttime:* integer)

Dept(*did:* integer, *dname:* string, *budget:* real, *managerid:* integer)

a) Give an example of a foreign key constraint that involves the Dept relation. What are the options for enforcing this constraint when a user attempts to delete a Dept tuple?

(3 Marks)

b) Write the SQL statements required to create the Emp table and Works table, including appropriate versions of all primary and foreign key integrity constraints.

(6 Marks)

c) Define the Dept relation in SQL so that every department is guaranteed to have a manager.

(3 Marks)

d) Write an SQL statement to add John Doe as an employee with *eid* = 101, *age* = 32 and *salary* = 15,000.

(2 Marks)

e) Write an SQL statement to give every employee a 10 percentage raise.

(4 Marks)

Continued...

f) Write an SQL statement to delete the Toy department. Given the referential integrity constraints you chose for this schema, explain what happens when this statement is executed.

(7 Marks)

Question 4 (25 Marks)

Distributed database systems are at the centre of today's information systems. Answer the following questions.

a) Compare and discuss the difference between a distributed database and a centralized database.

(10 Marks)

b) Name the components of a Distributed Database Management Systems (DDBMS).

(5 Marks)

c) Given an example of an application that fulfils the following criteria;

(6 Marks)

I. Single site data single site processing
II. Single site data multiple site processing
III. Multiple site data multiple site processing

d) Explain the following terms in the context of a Distributed Database Management Systems(DDBMS) operation; (4 Marks)

I. Remote request
II. Remote transaction
III. Distributed request
IV. Distributed transaction

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